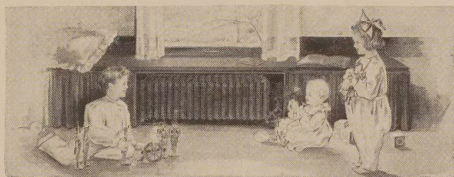


THE HOMES SUCCESSFUL



The Homes Successful



Man, through all ages of revolving time,
Unchanging man, in every varying clime,
Deems his own land of every land the pride,
Beloved of heaven over all the world beside:
His home, the spot of earth supremely blest,
A dearer, sweeter spot than all the rest.

—JAMES MONTGOMERY.

Copyright, 1900, by

AMERICAN RADIATOR COMPANY

Eighteenth Edition.

The Homes Successful

Home Comfort

There is no feature connected with the material conditions of domestic life which is of more importance to home dwellers than the ways and means employed to maintain comfort and good cheer. Money is poured out with a Midas hand for decorations, hangings, art and bric-a-brac and the thousand dainty furnishings of a home, but the method of warming is often left to chance. Yet the most essential of all features necessary to make the home cheerful and cozy is an atmosphere of genial, liberal warmth. Regard for the general well-being of one's family—aye, common hospitality toward one's guests—demands that the home shall be equipped with modern means for warming and ventilating. Rich furnishings and decorations alone can never put a warm welcome into a cold house.

The home successful is founded upon a just appreciation by its occupants of the value of



sanitary safety—pure, freshly warmed air at a genial, even temperature *throughout the entire house*. A little larger first investment should not therefore be grudged when in several years a Hot Water or a Steam heating outfit will effect a saving in fuel and repairs, of many hundred dollars, over cost of any other method of warming, —aside from securing the equally important advantages of healthfulness, comfort, convenience, cleanliness and safety.

Great progress in heating methods Almost every one is familiar with the wonderful recent developments in telephones, electric lighting, automobiles, and kindred inventions; yet the average citizen, strangely enough, is unfamiliar with the more remarkable achieve-



The Old Home—"The spot of earth supremely blest;
The dearer, sweeter spot than all the rest,"—
should have the mystic beauty of its surroundings matched
within-doors by the magic cheer
and cozy comfort of a pure, mild, geniallv-warmed atmosphere.

ments during the past seven years in the science of warming dwellings, schools, churches and public buildings.

**Is it wise to
often refurnish**

with carpets and wall decorations at greater expenditure of time and money than is ever collectively given to what should be the primary consideration of any home, viz., its vitality-giving, evenly-tempered, healthful atmosphere?

**Modernizing
old houses and
buildings**

This pamphlet is written not so much with a view to interest in the subject only the builders of new homes, as it is to bring to owners of unmodernized buildings a better understanding of the subject.

Builders of new homes seek or are informed as to the best by their architects, and almost invariably install steam or hot water outfits.

It is therefore to owners of old or unmodernized houses who may not be familiar with the benefits of modern methods that we address this pamphlet. The costs are much less than is commonly thought, and countless improvements have been made in methods and means. In fact our methods have made such a revolution in heating homes that nothing would more surprise an ancestor (if one could return to us) than our modern appliances for comfort-making.

The work of installing is very simple and free from vexation and confusion. Modern artisans erect outfits with little noise and quickly.



Our Revolutionary ancestors would be delighted at our ways of warming.

No need to alter the house There is no need of tearing out partitions, nor in any way to alter the general features of the house.

The simplicity of the modern steam and hot water apparatus and the ease of erection have now brought the cost within the reach of a large portion of our house owners.

No one can afford to use hot air

furnaces, stoves or open grates, even if economy in consumption of fuel is only to be considered, as the waste would in ten to fifteen years pay the first cost and maintenance of a perfect warming apparatus, which, after that period, *would produce a steady income* as compared with the expense of operating any of the crude systems.



"The dainty modern cottage becomes a paradise assured when equipped with modern warming apparatus for the long winter months."

Nor is the waste alone in fuel The escaping clouds of ashes and soot from grates, stoves and hot air furnaces destroy carpets, furniture and draperies, and make the housewife's existence, with its flourishing circuit of broom and duster, akin to the endless drudgery of the "Man with the Hoe." This disastrous disregard of consequences arises from the erroneous impression that these crude methods are vastly cheaper, whereas it is only in the cost of installing them that they are lower-priced. In reality they are from the beginning losing investments.



Women favor our modern methods of warming, because halls and corridors are uniformly warmed — *every* room comfortable for the little folks.

"Better be sure than sorry" For it is a falsely founded economy which does not appreciate that to live for the future is to live for the present; to save for the future is to save for the present. It does not always seem so but it always is so.

The hygienic advantages of steam and of hot water heating are not shared by any other devices.

While it cannot be claimed that they are a panacea for all ills, yet for preserving health and as a preventive of sickness, no other systems will compare with them. Persons suffering from throat or bronchial troubles, neuralgia, rheumatism and kindred ills, are benefited by living within their influence.

Totally inadequate is any method which does not include the possibility of providing an abundant supply of pure, freshly warmed air, for the question of

Ventilation is *All au-*
most important *thorities*

agree that the failure to make proper provision for ventilation is a more potent, prolific and preventable source of ill health than any other emanating from the dwelling.

"Men can live without food ten days; they can't do without pure air five minutes."



Babies thrive in the genial atmosphere of homes warmed by steam or water, day and night-time too.

With either Steam or Hot Water, it is permissible to arrange for the admission of any amount of pure air.

The outside air before entering the apartment is warmed (see



"Rich furnishings and decorations alone can never put a warm welcome into a cold house."

illustrations, pages 33-34) by passing over Radiator surfaces of comparatively low temperature, the only change in condition being a slight rise in temperature, thus yielding an abundant supply of pure freshly warmed air and at the same time effectually preventing drafts and cold exposures.

In a hot air furnace the air passes through and is forced to come

in contact with long, circuitous iron flues, nearly if not quite red hot, which burn or decompose any

particles carried in suspension, and results in a high, debilitating temperature.

Consider the parched quality of air yielded from passing over the surface of a stove or a hot air furnace at upwards of 600. degrees as compared with the purity of the air mildly warmed by a hot water apparatus at 162 degrees!

Overheating. Travelers in the desert where the air is at once



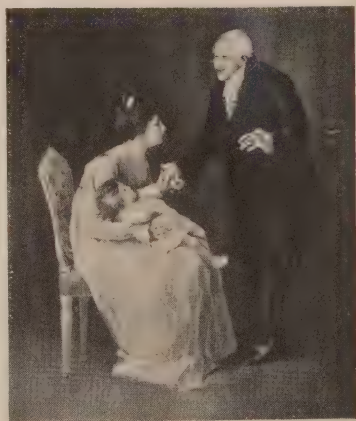
"The camel alone is made to withstand hot air."

extremely hot and extremely dry, are surprised to suffer at times disagreeable cold.

Like the scorched atmosphere from the hot air furnace, being unduly dry, the desert air possesses the quality of high absorbency, and so rapidly robs the body of moisture that the traveler is perplexed and alarmed at learning the recorded temperature, as compared with the sensible temperature—that is, the temperature as it *is*, and as it *seems* to be. Similarly,

Have you ever while seated in a hot air furnace-heated room
felt chilly and been mystified to find that the thermometer recorded a temperature above normal—68 to 70 degrees?

It is the devitalized, burned-out air *attacking you* in its search for recuperative moisture, and is more sensitively felt because of the rapid evaporation from nose, throat and bronchial tubes, eventually producing headaches, colds, coughs, croup, catarrh, etc.



"A home uniformly warmed will protect the family health."

Spontaneous combustion If in the last stages of the process of lumber drying there should accidentally and suddenly be admitted to



It is agreed that a uniform, normally moist atmosphere is best for the preservation of all delicate musical instruments.

the kiln a large quantity of normal air, the friction of the overheated, moistureless air in its violent rush for recuperation would result in spontaneous combustion.



"Inflammation of eyes, nose and throat is not dissimilar to a conflagration."

In like manner, should you pass quickly from the desiccated, scorched atmosphere of a hot air furnace or a stove-heated room into the outside cold air, conflagration or inflammation of the sensitive membranes of the nose, throat or bronchial tubes is likely to be produced, with its ensuing penalties of neuralgia, tonsilitis, bronchitis, pneumonia, etc.

Were our climate such as to require indoor artificial warmth the year around no one could steadily endure this character of heat.

So slowly and insidiously, however, does this desiccated heat act upon the human system that its baneful influence is never properly recognized until quite too late, and then usually attributed to other causes.

A draughty house is the acme of winter discomfort. Children's colds usually result from playing at windows, or upon floors of unevenly heated rooms. If there is any wind outside, a hot air furnace will not produce an even and general warmth throughout the building. This lack of warmth is always noticeable in the rooms on the exposed sides—the direction from which the wind is blowing.

Yes, the fault is chronic with hot air furnaces.

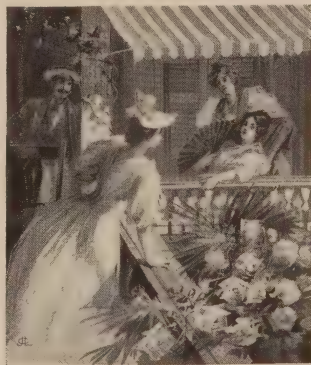
Why? Because furnace heat is strictly convective heat—it *follows* air currents—and the lighter, hot air currents *cannot be forced* against the colder, heavier air currents. The heavy air has the advantage.



"A test of air currents."

Steam and Hot Water combine the natural laws of heat transmission—by radiation, conduction and convection. The perfect operation of the apparatus does not in any way depend upon the outside conditions—whether there is storm or calm—the circulation of the heat is within the apparatus itself, and therefore *positive*. In the use of these systems, as the immediate source of heat supply for each room is the radiator definitely installed to fit the size and exposure of each room, the proper warming of every room is an assured certainty—in *all* weather.

The sun the power of radiant
illustrates heat in delivering its
ardent warmth to the earth despite
the intervening intensely cold air
of the upper strata or the prevalence of high winds. Acting



"There is summer all the year round in homes having a modern heating apparatus."

in harmony with this law of nature, Steam and Hot Water invariably deliver the heat exactly where it is most demanded. Usually the radiators are placed close to the *outer* walls of the room, or directly underneath the windows, where the colder air is immediately brought in contact with their heated surfaces.

Hot air furnaces require inconveniently large tin
Cellar gases pipes for conducting hot air to the various rooms. These pipes are from the very first quite insecure, and by reason of their frailty and the settling of the building are sure to spread apart or become loose in their seams or joints.



"Modern hostess-ship requires that the home to which the guests are invited shall be comfortably, healthfully warmed."

The dome of a hot air furnace invariably leaks coal gases; and through the loosely jointed pipes cellar gases are frequently conducted to the living rooms. A simple method of determining whether a hot air furnace is absolutely tight, is to throw upon the furnace fire a large wad of cotton which has been immersed in peppermint and thickly sprinkled with sulphur. If the door of the furnace be tightly closed and the odor of peppermint or sulphur is traceable in the rooms above, in like manner will the poisonous coal and cellar gases be carried to and unconsciously breathed by the occupants.

Note that *all gases are not odorous*, and there are few cellars which do not have foul air.

There is, also, always danger of conflagrations because of this unreliable tin-piping of hot air furnaces. The fire statistics of all large cities show an alarming number of conflagrations annually due to this cause.

The average life of a hot air furnace is twelve years, while *cast iron* steam and water boilers and radiators will endure as long as the houses in which they are erected shall stand.

Curiously, rust has no appreciable effect on cast iron, while it is highly destructive of sheet iron or steel. The rusting is particularly noticeable in the summer months when stoves or hot air furnaces stand idle.

The open fireplace is a cheerful ornament, and gives an impression of homelike beauty. A house should not be without one or more. But one might as well attempt to warm his house with a hot-water bag as to try to warm it with fireplaces.

Everyone can appreciate how much the cold drafts and uneven temperatures detract from the pleasure of sitting around an open fire.

"Your back is chilled while your knees scorch."

Objectionable drafts Necessarily there must be strong drafts *from the room* to make an open fire burn at all smartly, just as there must be a strong draft *in the room* to give the desired impulse to the



furnace hot air currents; while Steam and Hot Water operate by expansion and gravity of the steam or water *within the apparatus itself*, and therefore are absolutely independent of draft or air currents without the house or within the apartments.



Summer Visitor:—"You must take lots of comfort in winter from that great fireplace."
Countryman:—"Wal, you see we don't hev much time; I'm busy chopping wood for it most of the time, an' Johnny. he's busy lugging it in, an' ma, she's busy puttin' it on the fire."

When open fireplaces are used in connection with Steam and Hot Water the objectionable drafts are avoided, for they may then well serve as valuable ventilators. There is a difference between ventilation and draft—a draft is ventilation carried to a dangerous extreme.

Eighty per cent of heat wasted Recent tests made with the most approved form of open grate, show that eighty per cent of the heat generated passes to waste up the chimney.

Man's love for an open fire is, after all, another statement without a true, literal meaning, for no one needs or desires a fire when the atmosphere is perfectly genial and comfortable.

As to stoves it needs only be said that they combine all known sanitary objections which can pertain to a method of heating, with the added objections that they occupy too much and too valuable space in the room, are more dangerous, and require, pathetically, to be erected and dismantled annually; while the care necessary to keep up the number of fires required, the drudgery of bringing in fuel and removing ashes from the many rooms, together with injuries to decorations and draperies caused by soot and dust add materially to the cost.



"An Egyptian heating stove. 2000 years later finds little change in principle of the modern stove."

In Pompeii may still be seen houses built with double walls, the spaces between serving as flues through which were conducted hot air currents, superheated by means of an oven or furnace placed under the floor. These hot air currents warmed the walls, which in turn imparted warmth to the atmosphere within the rooms. The scorched, burned air, however, *was not permitted to enter the living rooms*. In this most important respect



"Carrying coal and ashes up and down stairs is needless drudgery.
With modern heating methods this work is confined to the cellar."



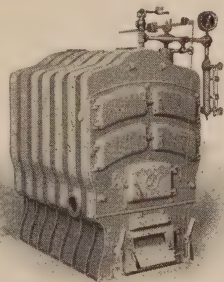
Baby and mamma at tub exercise by side of a warm
AMERICAN Radiator.

modern householders, in a climate necessitating indoor life for full seven months of the year, exhibit an entire disregard of consequences by employing the crudest methods, such as open grates, stoves and hot air furnaces which, discharge their gas-tainted and dust-laden product into the room, polluting and robbing the atmosphere of its purity and vitality.

The very best Heating by Hot Water is undoubtedly the most **heating methods** desirable system yet devised for warming private residences and most other classes of buildings requiring artificial heat. Approaching it very closely in merit is that of Low Pressure Steam, and for many buildings, under certain conditions, the latter is considered superior. Both systems have special points of merit.

The more important parts of a Low Pressure Steam or a Hot Water heating apparatus—the Radiators, Boiler and Piping—are very similar; and while the results obtained with either are practically the same, where equally well-planned and installed, it is of interest to note the difference.

Both methods require a boiler very similar in construction and manner of operation to generate the heat.



Simple and compact in form.

The boiler is located at the lowest level possible—usually at a point in the basement convenient to fuel bin and chimney flue. It is correctly compact, occupying very little floor space or height. From the boiler small iron pipes are run to the direct radiators placed in the rooms to be warmed; or, if objection be raised to the

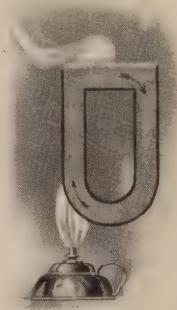
radiators appearing in the rooms, heating surfaces called indirect radiators are hung from the cellar ceiling in tin-lined boxes, into which the fresh air inlets are conducted. (See illustration, page 34.)



Sure comfort for the children's playroom.

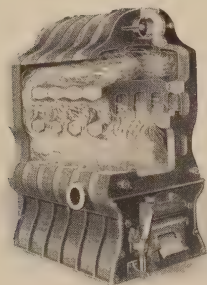
the place of a hot air furnace, the steam or water riser pipes can often be run in the discarded hot air tin risers—so that none of the piping need appear in the room.

Gravity hot water heating requires that the entire outfit, including Boiler, Radiators and Piping, be filled with water. Water is at its greatest density at about 39 degrees Fahrenheit. Immediately upon the temperature being raised in the boiler by starting the fire, water expands and becomes lighter, volume for volume.



Showing heat circulation in a test tube.

The heated or lighter water is forced up through the flow pipes (by the weight of the colder or heavier water falling in the return pipes to be reheated), until it reaches the radiators, where it is cooled by parting with a portion of its heat, through the radiators, to the cold air in the various rooms.



A broken view, showing the hollow castings, filled with water, and the long fire travel, absorbing all the heat from the fuel.

What operates it This cooled water, because of its increased weight or greater density, now drops to the boiler through the return pipes to be again heated, the circulation continuing so long as the water in the system is at a higher temperature than the surrounding atmosphere. The motive power is gravity—"one of the most simple, constant and unerring laws of nature." The operation is just as certain as the fact that the lighter end of the scale goes up

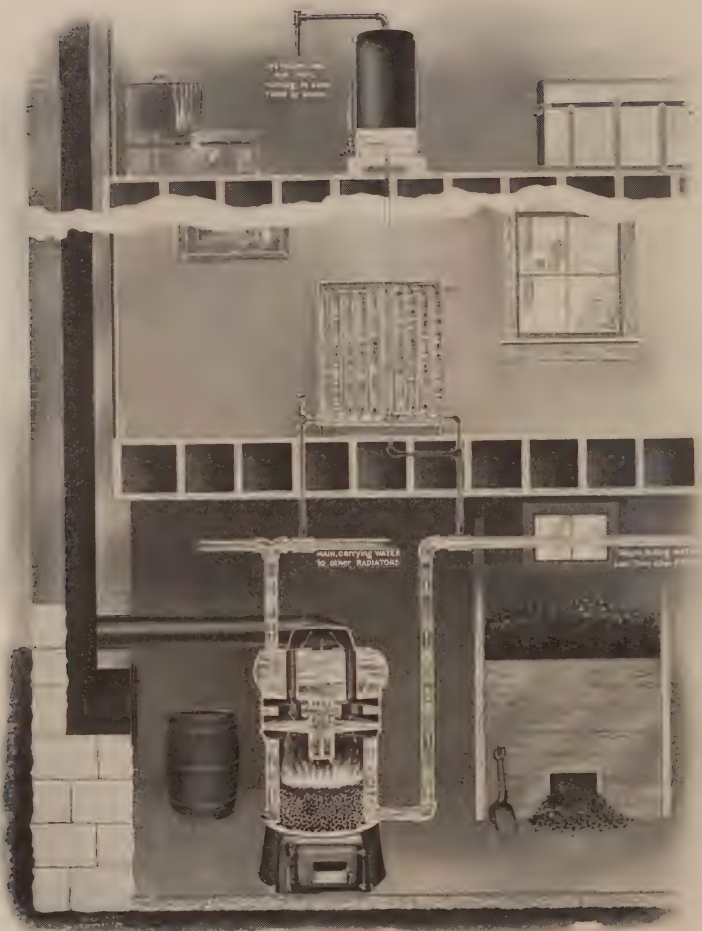
when the heavier end comes down.

In every Hot Water system a small cistern or expansion tank, as it is called, is fixed above the highest radiator. This tank is to provide for the expansion and contraction of the water; for water when heated from 40 to 212 degrees Fahrenheit will increase in volume about one twenty-third.

The expansion tank keeps the system open to the atmosphere, and makes over-pressure impossible.

The same water is used over and over again, except that a



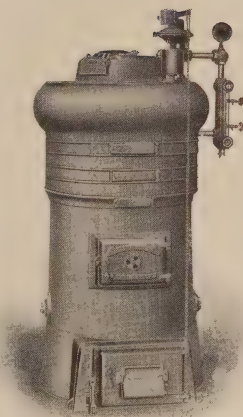


NOTE—This view shows a small part of an average outfit opened up to illustrate circulation. It merely shows the idea, by boiler, piping and one radiator, and the expansion tank—which is the relief-valve of the job—always open to the air. For the room as shown a radiator could be set in the corner or under the window if desired. The pipe to expansion tank usually runs from some return pipe from a radiator on an upper floor.

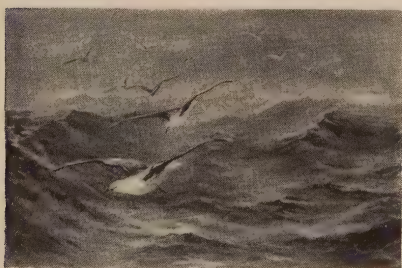
few gallons need be added during a season to make good the waste due to evaporation at the expansion tank. So little water being used, sediment cannot collect; and as the apparatus is always full of water, air is excluded and rust and corrosion prevented.

The apparatus is, therefore, practically *indestructible*.

Water is the best medium for conveying heat, as volume for volume it will absorb more heat than any other known substance. On account of this same property it is possible to provide heating surfaces in boilers *which convey to the water practically all the heat produced in the combustion of fuel.*



Our full catalogue of Boilers would interest you.

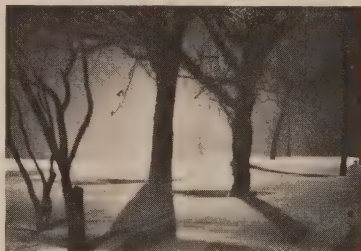


"Water is the medium which carries the heat around and around — like an endless chain."

As the coldest, and therefore, heaviest water continually falls to the lowest level, viz., the chamber surrounding the fire-pot of the boiler, its position is constantly to invite, attract and absorb the greatest possible percentage of the active heat rays of the fire. Because of this, each pound of fuel is made to yield double the volume of heat. Hence the high efficiency and economy.

Easiest to control Again, as any desired temperature varying from 100 to 212 degrees Fahrenheit may be maintained in the water by *automatic* regulation of the draft dampers, the slow or rapid combustion of fuel can easily be adjusted to meet any degree of outside temperature.

A hot water boiler is therefore easiest to control in mild weather. It as quickly meets the exigencies of a storm.



"The joy of winter is in the heightened pleasure of indoor life when the family health and comfort is protected by genial, even warmth throughout the home."

Evenness of temperature A hot water apparatus will not over-

heat, but will follow the ups and downs of our capricious climate more closely than any other known method.

There can be no cold rooms or hallways, no cold corners.

It warms the whole space evenly — a thermometer varying but a degree or two at any point in the room.



Roman Hot Water Boiler.
Original in Field Columbian
Museum, Chicago.

There can be no sudden fall in the room temperature during the small hours of the night, for the large body of water in the apparatus continues to distribute its warmth for hours after the fire has been checked for the night or even should the fire through carelessness have been allowed to go out.



Like a June evening The comparatively low and even temperature of the radiating surface imparts to the atmosphere a warmth not unlike that of a perfect June evening, being balmy, permeating, unvarying and health-giving.

It operates with steady precision and *perfect silence*, in harmony with the law of nature, like the sending of the blood from the heart through the arteries, whether on its first or millionth course through the apparatus.

Economy of fuel In view of the above facts it is not difficult to account for the wonderful results in economy of fuel obtained with a Hot Water heating apparatus where properly planned and installed. In practice we find that the fuel required for one ordinary grate fire or stove is sufficient to warm an entire house by hot water circulation.



Our IDEAL Arco Water Heater, just right for cottage homes, etc.

No more fuel is used than the amount needed to warm the air to the degree desired. In other words, simple forms of heat-controlling devices are procurable in the market which so *automatically* regulate the draft and check dampers of the boiler as to keep the room temperature constantly at any one desired degree of warmth.

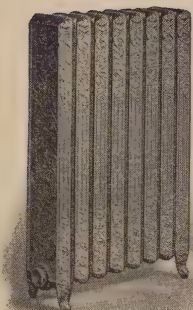
Absolutely safe An *inexperienced* person can operate it. It requires less attention than does a stove, because the boiler holds a large quantity of coal, which is more slowly consumed. Automatic devices make the control very simple and it is absolutely safe in every way.

In large buildings and where long distances must be traversed, also in buildings used at intervals, such as churches and schools, Low Pressure Steam can often be used to better advantage. The maintained higher temperature admits of less heating or radiating surface being used, and consequently may be installed at a smaller initial cost than for Hot Water. In economy of fuel, however, and maintenance, the advantages are probably in favor of the latter.

In low pressure steam heating the heat generated by the fire in the boiler is expended on a relatively small body of water (which does *not entirely* fill the boiler); a portion of this water is vaporized, and the vapor or steam thus generated is utilized in conveying heat to the radiators. With the ordinary gravity steam method this is accomplished by an apparatus as simple as that for Hot Water.



Park Row Building, New York City, representative of hundreds of "sky scrapers" which are heated with AMERICAN Radiators.



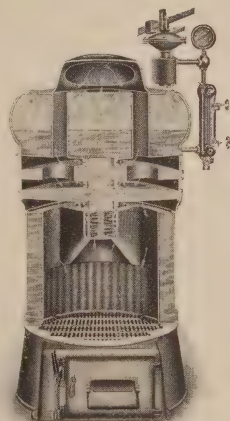
The ornamentations
of our radiators are
from classic ideals.

As is well known, water is converted into steam immediately that it is raised beyond a temperature of 212 degrees Fahrenheit, under atmospheric pressure. By reason of the potential energy thus acquired, steam has the power of a very great expansion unless it be restrained by external pressure.

**Positive
circulation**

When confined, as in a heating apparatus, by Boiler, Pipes and Radiators, the expansive force tends to press the steam into every part of the apparatus.

The action is independent of gravity and is the principle upon which the circulation of steam depends. The heat contained in the apparatus is imparted to the metal of the radiators, which



Our large boiler catalogue, to be had for the asking, explains many interesting features of construction.

in turn emits or radiates it to the apartment to be warmed. Condensation causes the loss of heat (vapor), and the water of condensation returns to the boiler by gravity, to be again reheated and vaporized, the process continuing so long as fire is maintained in the boiler sufficient to raise the temperature above 212 degrees.



Craig-y-nos, Wales (Adelina Patti's castle).

IDEAL Boilers and AMERICAN Radiators are made in sizes to fit three-room cottages as well as to warm large groups of buildings from a single source.



"AMERICAN Radiators are an ornament to any room, however rich the furnishings."

Ask for booklet "Radiation and Decoration," showing Radiators in colors to match room decorations, best ways of placing radiators, etc., etc.

**Noiseless
and safe**

The apparatus is operated with very little loss of water, and if properly installed is absolutely noiseless and safe. It is not necessary that the apparatus should be attached to a street water system, although it is more convenient to have a supply pipe thus connected.

Each boiler is fitted with an automatic damper regulator,

which regulates the *exact amount* of steam pressure *to be carried*. To the good housewife the thought of "a boiler filled with steam" suggests danger of explosions. It is therefore, perhaps well to explain that in steam heating, *the pressure carried is usually not over two pounds*, or in extreme cold weather, say a maximum of five pounds pressure, and such a pressure of force is

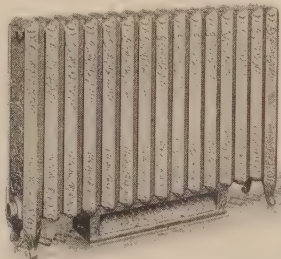


Radiator with special legs for fitting under carpet.

ridiculously small, about the force which would be exerted to rock one's self in a rocking chair. In a hot water apparatus there is practically no pressure—merely the weight of the water in the apparatus. If by any oversight a greater pressure of steam should accumulate than is desirable, (usually two pounds



Radiator to fit around a window.

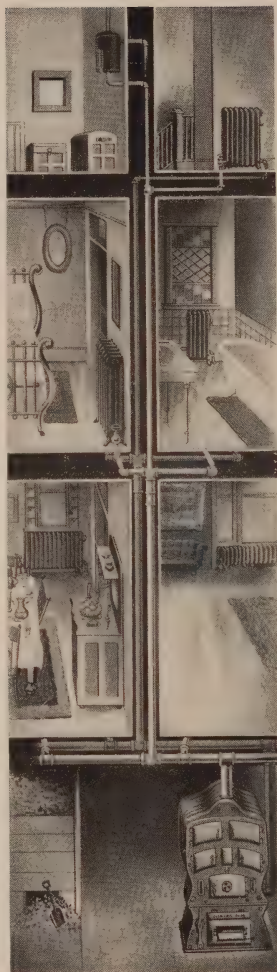


Radiator of low height.

or less,) each boiler is equipped with a valve set to release steam when the pressure reaches ten to twelve pounds, thus preventing any *possibility* of danger.

Boilers of cast iron (which admits of being molded into almost any shape) have after many years of experimenting been brought to a high state of perfection, and in their improved forms are designed to utilize practically all the heat generated, only enough passing up the chimney to promote sufficient draft for complete fuel combustion.

Are self-regulating Our "IDEAL" Steam and Hot Water Boilers represent the most advanced types of boiler construction, and in recommending them to our patrons, we are supported by the most favorable testimony of the leading heating experts as to their practical and splendid operation even under the most exacting conditions. These boilers are provided with the latest improved devices for self-regulation, and with ample fuel capacity to run from eight to

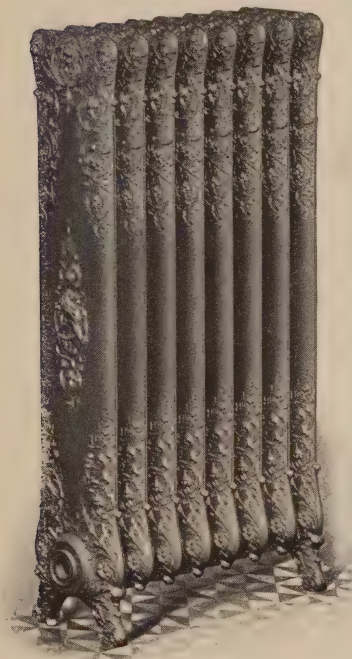


Showing piping concealed in partitions where apparatus is installed in a new house.

ten hours without attention. They are arranged for burning all kinds of fuel, including soft and hard coal, coke, gas or wood.

The radiators which are a most important part of the apparatus, as it is from these the heat must be radiated into the rooms to be warmed, are ordinarily the only part of the apparatus exposed.

Even a decade ago some housewives called a radiator "an ugly thing." Many types then in use were entitled to that designation. Although there were then in the market several types of radiators of advanced artistic outlines, the general appreciation of radiators was not altogether favorable. Ideas were then very largely the product of the common use of rough coil pipes—radiators of clumsy design, having heavy tops and bases on which dust and dirt could easily accumulate; and often the radiators were enclosed in iron screens and castings which mitigated the force of their unhandsome appearance at an expense of their efficiency, in stoppage of air circulation.



The modern Radiator is a work of art in iron.

Years ago, however, this Company instituted measures to produce lines of radiators which should

please the fastidious housewife in making them free from dust and dirt lodging surfaces, and in forms so graceful, symmetrical and artistic that they harmonize with and decorate the apartments in which they are placed. These measures have been successful in bringing out a large number of highly popular and artistic radiators.

These radiators, in plain or in ornamental patterns, finished as smooth as bronze, when nicely decorated in black Bauer-Barff, bronze or paint, grace any surroundings.

Change sizes at will The radiators are made in sections, and if found desirable at any time to alter their size, by reason of increase or decrease in size of room, one or more sections may simply be removed from or added to the radiator.

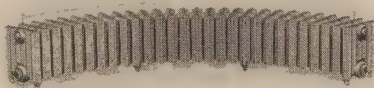
The illustrations include a few of the designs we are supplying, and are for the most part what are termed Direct Radiators.

Direct radiators They are placed in the rooms to be heated, and are of such forms as will afford the most effective



Showing the small amount of piping exposed where apparatus is installed in old house.

heating surface at the least expenditure of fuel. Both Steam and Water apparatus are easily regulated not only at the boiler but in each room by the valve on the radiator. A number of radiators can be turned on or off without affecting the perfect operation of the remainder of the apparatus, and the heat is thus *saved*.



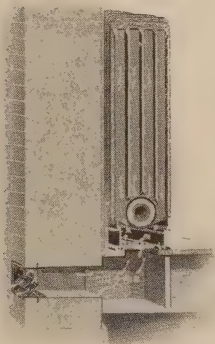
Low Curved Radiator for bay window.
Window seat may be placed above it.

Direct-Indirect are provided and radiators

fixed when extra ventilation is required in

addition to the heating, and every house should have at least one or two of such radiators, placed close to one of the exposed walls of the room and directly connected by conduit, as shown in illustration, to the outside freshly pure air. By this arrangement, as shown in illustrations, the outside pure air in quantities

which can be regulated by a valve, is brought through a convenient opening or conduit, in outside wall, and made to traverse a portion of the radiator; this freshly warmed air being delivered at a temperature not lower than that of the room.



A type of Direct-Indirect, showing cold air duct, from sunny side of house, leading up underneath radiator.

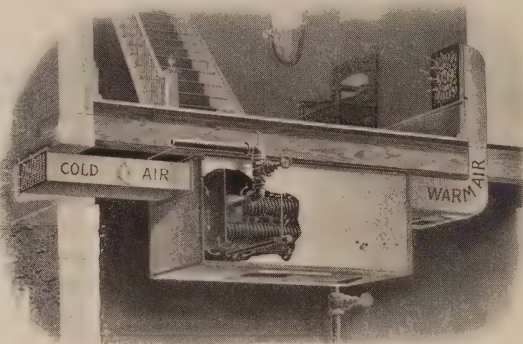
It often happens that in certain rooms the radiator would occupy space which could not well be spared, or perhaps a larger provision is required for ventilation than is possible with Direct-Indirect radiation.

**Indirect
radiators**

may in such cases be substituted. These are usually suspended from the ceiling of the basement in wooden boxes or cases (lined with tin), or set in brick-work compartments.

A cold-air duct is provided, leading from outside of the building to the bottom of the case inclosing the radiator, while a warm-air duct leads from top of case to the apartments to be warmed, terminating in an ornamental register, equipped

with a controlling valve. *The air of the apartment may be changed as frequently as desired, and any degree of temperature may be maintained.*



Indirect radiator hung close to basement ceiling; air duct leading in from outside pure air.

**The quality of
the radiators**

It is only necessary to add that the radiators we supply are the justly famous "AMERICAN RADIATORS," the quality, efficiency, correctness, durability and appearance of which are above criticism. At the Paris and St. Louis Expositions the highest possible award—the Grand Prize—was given "IDEAL" Boilers and "AMERICAN" Radiators. It



was in each case the only Grand Prize given any manufacturer in the world on radiators and house-heating boilers, or, in fact, on any kind of heating or ventilating apparatus. We shall be glad to send complete catalogues of these Boilers and Radiators on application.

Nature's highest endorsement

quality and production where Hot Water or Steam is used; in fact, these systems have today almost entirely superseded all other heating methods in greenhouse culture. Similarly that fact guarantees best conditions for the home and its occupants.

Artificial vs. natural methods

The most successful devices for the added comfort of mankind are those which rely in their operation upon the simple, direct, unerring principles of nature, which are always beneficent.

is afforded by the experience of florists. Greenhouse tests show the highest increase in plant



The meal is often helped out by some "piping hot" plates from the closet of our Dining Room Heater



A Dining Room Radiator with warming closet.

It is impossible for man to improve on natural laws; he can at best but hope to learn and intelligently apply them.

Stoves and hot air furnaces depend for their operation almost entirely upon artificial, *forced* methods; hence they fail to satisfactorily answer the requirements. Their sale is today dependent upon the low initial cost—regardless of the wrong results they give or the exorbitant expense their use will ultimately bring—the false economy which does not take heed of the morrow!



Our modern methods of warming are being used in many old fashioned domiciles where they are much appreciated "by the old folks at home."



THE WHITE HOUSE

As restored and refurbished, is warmed by IDEAL Boilers and AMERICAN Radiators. What is now enjoyed by the first citizen of our land is within the reach of many of our humblest householders.

Steam and Hot Water Warming combine within them, and for their successful operation entirely depend upon, these simple yet great fundamental principles of expansion, gravity, circulation, radiation, conduction and convection. They therefore imitate and are in accord with nature's laws.

Further, and most important, they do not change or affect the life and purity of the atmosphere, but merely temper it to that genial, even degree or condition best suited to man's greatest comfort and vigor. .

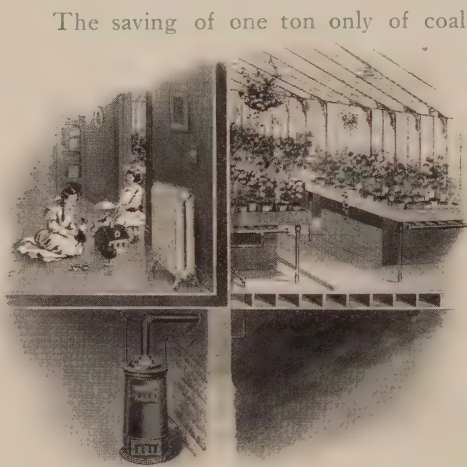
"Else how had the world avoided pinching cold?"

**How the
apparatus is
put in**

An accurate scale drawing is first made of the entire apparatus as it is to be installed in the house; the exact sizes of material are then brought to the residence, and as all the parts screw tightly into one another, it is unnecessary that any noise whatever should be heard during the process of erection.

To summarize The aim of this treatise is to make you a better judge of your needs. Our interests are on the side of good judgment. There would be no need for this treatise were it not for the fact that a Hot Air Furnace costs a little less than does a Hot Water or Steam apparatus. Yet the first cost is a minor part of a heating cost. That expense comes but once in a lifetime, if you get the right apparatus.

It is fuel that costs—the constant expense that continues as long as the house shall stand. The waste of the stove or hot air way is enormous. The principle is wrong—inadequate—often seriously unhealthful. You find Hot Water or Steam is now in nearly every house where *real* cost outweighs first cost. You find them in large buildings where fuel economy means much in figures, though the percentage of saving is as large in small buildings.

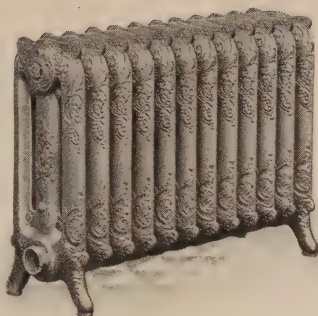


A narrow radiator for vestibules, hallways, bath-rooms, etc.

The saving of one ton only of coal in a year will meet the interest on \$100.00—and it is a small sized apparatus which will not save more than that! With Hot Water or Steam costly coal is unnecessary, as commonest soft coal or cheapest screenings is made to yield best results. Why, therefore, continue to pay extra for the bother, inconvenience, drudgery

and fuel expense of stoves, and hot air furnaces? Why lose in addition all the comfort, convenience and healthfulness of our way?

If you are a landlord, your building heated with our apparatus will yield from 15 to 25 per cent. increased rent, and the property keeps steadily rented—secures a higher class of tenants. It is, too, a good investment for the old home—enhances its value as well as its comfort.



Ask for our complete catalogue of radiators.

Steam and Hot Water warming have unquestionably raised the standard of home comfort—have brought about a perfect *automatic control* of indoor temperature and relieved the household of dirt and drudgery. And these great gains are all paid for—for you—in the less amount of fuel burned.

Competent fitters The best results are obtained by employing experienced, reputable men who understand the heating business to properly locate the radiators and determine the correct proportions of heating surface, according to the exposure of each room, the use to which each room is to be put, the amount of window surface it contains, its connection with other rooms, how often it is necessary to change the air to suit the needs of the several occupants, etc., etc.

Why not consult a competent steam and water fitter to-day? The services which modern fitters are prepared to furnish will protect your family health and enable you to obtain a large measure of comfort with the least expenditure of fuel and work. They help to make the homes successful.



What can be nicer for our little pets (and *their* little pets) than a cheerful, sunlit bedroom, tempered genially and uniformly by a peerless AMERICAN RADIATOR?

The proverb old is verified in you,
Love me and love my dog, and so adieu.
— Turberville.

THE HOMES SUCCESSFUL

